each of the pads tested, calculated according to the loading levels described in Table 9, are depicted in Table 10 below.

[0207] Table 10 shows ORC impregnation levels deduced according to the impregnation levels found in Table 9 above and their consequent concentrations in the following MIC experiments (see section b).

TABLE 10

	Impregnation Loading Solution Conc. (μg/ml)	Total antibiotic impregnation level in ORC pad (μg/g)	Total Antibiotic impregnation level in ORC pad (%)	Antibiotic concentration in MIC experiment (ng/ml)
Rifampin	200	628.2	0.06282	1465.8
	150	471.15#	0.047115	1099.35
	100	314.1	0.03141	732.9
	50	157.05	0.015705	366.45
	40	125.64	0.012564	293.16
	30	94.23	0.009423	219.87
	20	62.82	0.006282	146.58
	10	31.41	0.003141	73.29
Clindamycin	20	25.6	0.00256	59.73
	10	12.8	0.00128	29.87
	5	6.4	0.00064	14.93
	2.5	3.2	0.00032	7.47
	3	3.84	0.000384	8.96
	2	2.56	0.000256	5.97
	1.5	1.92	0.000192	4.48
	1	1.28	0.000128	2.98
	0.5	0.64	0.000064	1.49
Minocycline	40	21.6	0.00216	50.4
	20	10.8	0.00108	25.2
	10	5.4	0.00054	12.6
	5	2.7	0.00027	6.3
	4	2.16	0.000216	5.04
	3	1.62	0.000162	3.78
	2	1.08	0.000108	2.52
	1	0.54	0.000054	1.26

a. Antimicrobial Activity of Degradation Products of ORC Pads Impregnated with Different Concentrations of a Single Antibiotic

[0208] ORC pads impregnated with a single antibiotic to be used for preparation of degradation products of ORC were tested for antimicrobial activity using the MIC measurement described in Example 2 above. Briefly, ORC pads weighing on average 70 mg each were impregnated with the selected antibiotic. Extracts of degradation products of antibiotic-impregnated ORC were prepared by immersion and incubation in 3 ml of sterile PBS for 3 hours at ambient temperature. The ORC degeneration products were then removed, and any remaining ORC particles were filtered out using a 0.8/0.4 μm syringe filter. This extraction fluid was then diluted 10-fold into Muller Hinton growth medium containing bacteria. Bacterial growth was monitored every 20 min for a total of 18 hours according to optical density (OD) at 600 nm, using an ELISA reader.

[0209] Tables 11a summarizes the results obtained by the used degradation products of single antibiotic-impregnated ORC pads according to their ET50 as described in Example 2. The results resemble those of the secondary stage MIC see Example 2, and the synergistic effect of minocycline is even more pronounced when the antibiotic is impregnated onto the ORC, such that degradation products of antibiotic-impregnated ORC pads are obtained.

TABLE 11a

	Antibiotic conc. in impregnation fluid	% antibiotic on ORC	conc. in MIC ng/ml	ET50
Minocycline	40 μg/ml I	0.00216	50.40	>2000
	20 μg/ml I	0.00108	25.20	>2000
	10 μg/ml II	**0.00054**	**12.60**	**2000**
	5 μg/ml II	0.00027	6.30	1145
	0	0	0	819.4
Rifampin	200 μg/ml	0.06282	1465.8	>2000
	150 μg/ml	0.047115	1099.35	>2000
	100 μg/ml	**0.03141**	**732.9**	**1396**
	50 μg/ml	0.015705	366.45	643
	0			712.5
Clindamycin	20 μg/ml	0.00256	59.73	>2000
	10 μg/ml	0.00128	29.87	>2000
	5 μg/ml	**0.00064**	**14.93**	**1425**
	2.5 μg/ml	0.00032	7.47	975.9
	0	0	0	663.2

[0210] The MIC result presented in Table 11b below shows the reduction in the minocycline levels required in order to achieve antimicrobial activity. It is apparent that the interference of degradation products of ORC with Rifampin activity remains, generating an MIC which was 50 times higher than that of the primary stage MIC. The MIC of Clindamycin was four times lower in the ORC degradation products from the impregnated ORC. However, the MIC of Minocycline was 20 times lower than that of the 1st stage MIC, further establishing the synergistic effect of minocycline and degradation products of ORC.

[0211] The results showed that the impregnation process did not impair the synergism of minocycline and degradation products of ORC described above, and that rifampin, the activity of which was detected as impaired, was also impaired once impregnated onto the ORC. These results provide further proof of the synergism between degradation products of ORC and Minocycline.

TABLE 11b

Antibiotic#	In-house (primary)MIC (μg/ml) #	Antibiotic-impregnated ORC (tertiary) MIC (μg/ml)#	Fold reduction in MIC concentration
Minocycline#	0.254#	0.0126#	19.85#
Rifampin#	0.015#	0.733#	0.019#
Clindamycin#	0.0624#	0.015#	4.15#

c. Antimicrobial Activity of Degradation Products of ORC Pads Impregnated with Different Concentrations of a Combination of Two Antibiotics

[0212] Since a synergistic effect was observed between degradation products of ORC and minocycline, minocycline was used in all combination studies. Combinations of: 1—minocycline and clindamycin; or 2—minocycline and rifampin were studied, as shown in Table 12 below.

TABLE 12

Minocycline ng/ml	Rifampin ng/ml	Total (ng/ml)	ET50
0.00	0.00	0.00	409
1.26	0.00	1.26	585.4
2.52	0.00	2.52	799.9
5.04	0.00	5.04	>2000
6.30	0.00	6.30	>2000